

Appl. No. 10/801,828
Amdt. Dated May 30, 2006
Reply to Office Action of February 28, 2006

Amendments to the Specification

Please replace paragraph [0017] with the following amended paragraph:

[0017] The substrate 1 ~~is a transparent substrate, and it can be made from glass or silicon oxide.~~ The material of the gate electrode 2 can be a metallic conductive material, such as Cu, Al, Ti, Mo, Cr, Nd, Ta, or alloys thereof. The gate insulation layer 4 can be made of silicon nitride or silicon oxide. The channel layer 5 can use amorphous silicon or polycrystalline silicon. The ohmic contact layers 6a and 6b can adopt amorphous silicon or phosphor-doped polycrystalline silicon. The surface of the gate electrode 2 is parallel with the surface of the substrate 1. The gate electrode 2 controls the TFT 200 to switch on or off, and the TFT 200 is applied to a single-gated transistor.

Please replace paragraph [0018] with the following amended paragraph:

[0018] Referring to FIG 2, this is a top plan view of a display device using the TFT 200 according to a second embodiment of the present invention. The display device can be a liquid crystal display device, in which case the substrate 1 of the TFT 200 is transparent. The gate electrode 2 is in contact with a scanning line 17, and the source electrode 7a is in contact with a signal line 18, and the drain electrode 7b is in contact with a pixel electrode 11. The gate electrode 2 receives a signal transported by the scanning line 17. A signal transported by the signal line 18 is received by the source electrode 7a, and then output by the drain electrode 7b to the pixel electrode 11. The pixel electrode 11 holds the potential depending on a storage capacitance (not shown) until the gate electrode 2 performs a next operation.

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Please replace paragraph [0019] with the following amended paragraph:

[0019] Referring to FIG 3, this is a cross-sectional view of the part of the display device shown in FIG 2. A protection layer 19 is formed on the thin film transistor. The pixel electrode 11 is formed on the protection layer 19 and drain electrode 7b. The storage capacitance comprises the pixel electrode 11, the gate insulation layer 4, the protection layer 19, and the scanning line 17. A color filter 14 and a black matrix 15 are formed on a substrate 16. A common electrode 13 is formed on the color filter 14 and the black matrix 15. A liquid crystal layer 12 is arranged between the pixel electrode 11 and the common electrode 13. The display device is driven by the TFT 200, so the display efficiency is determined by the potential of the pixel electrode 11.

Please replace paragraph [0020] with the following amended paragraph:

[0020] Because the gate electrode 2 is deposited in the substrate 1, the thickness of the gate electrode 2 can be changed by changing the depth of the substrate 1 etched. Thus it is easy to increase the thickness of the gate electrode 2 to reduce its impedance. Furthermore, the height of the gate electrode 2 can be almost equal to that of the substrate 1. Therefore, the TFT 200 can efficiently reduce an RC delay of a scanning signal. ~~In addition, because the thickness of the gate electrode 2 can be easily increased to reduce its impedance, an area of the gate electrode 2 may in effect be reduced without affecting the impedance of the gate electrode 2. Correspondingly, an area of the pixel electrode 11 may be increased, and thus the display device using the TFT 2(X) can obtain a higher aperture ratio.~~

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Please replace paragraph [0021] with the following amended paragraph:

[0021] A method of producing the thin film transistor 200 shown in FIG 1 comprises: a photo mask process of producing the gate electrode 2, and a later process of manufacturing other parts of the thin film transistor 200.

Please replace paragraph [0024] with the following amended paragraph:

[0024] The later process of producing other parts of the thin film transistor 200 is shown in FIG 10 to FIG 13 and in FIG 1.